MONTHLY WEATHER REVIEW.

Editor: Prof. CLEVELAND ABBE.

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INTRODUCTION.

The MONTHLY WEATHER REVIEW for January, 1904, is based on data from about 3300 stations, classified as follows:

Weather Bureau stations, regular, telegraph and mail, 167; West Indian Service, cable and mail, 4; River and Flood Service, regular 43, special river and rainfall, 190, special rainfall only, 56; voluntary observers, domestic and foreign, 2565; total Weather Bureau Service, 3025; Canadian Meteorological Service, by telegraph and mail, 20, by mail only, 13; Meteorological Service of the Azores, by cable, 2; Meteorological Office, London, by cable, 8; Mexican Telegraph Company, by cable, 3; Army Post Hospital reports, 18; United States Life-Saving Service, 9; Southern Pacific Company, 96; Hawaiian Meteorological Service, 75; Jamaica Weather Service, 130; Costa Rican Meteorological Service, 25; The New Panama Canal Company, 5; Central Meteorological Observatory of Mexico, 20 station summaries, also printed daily bulletins and charts, based on simultaneous observations at about 40 stations; Mexican Federal Telegraph Service, printed daily charts, based on about 30 stations.

Special acknowledgment is made of the hearty cooperation of Prof. R. F. Stupart, Director of the Meteorological Service of the Dominion of Canada; Mr. R. C. Lydecker, Territorial Meteorologist, Honolulu, Hawaii; Señor Manuel E. Pastrana, Director of the Central Meteorological and Magnetic Observatory of Mexico; Camilo A. Gonzales, Director-General of Mexican Telegraphs; Capt. S. I. Kimball, Superintendent of the United States Life-Saving Service; Lieut. Commander H. M. Hodges, Hydrographer, United States Navy; H. Pittier, Director of the Physico-Geographic Institute, San José, Costa Rica; Commandant Francisco S. Chaves, Director of the Meteorological Service of the Azores, Ponta Delgada, St. Michaels, Azores; W. N. Shaw, Esq., Secretary, Meteorological Office, London; Rev. José Algué, S. J., Director, Philippine Weather Service; and H. H. Cousins, Chemist, in charge of the Jamaica Weather Office; Señor Enrique A. Del Monte, Director of the Meteorological Service of the Republic of Cuba.

Attention is called to the fact that the clocks and self-registers at regular Weather Bureau stations are all set to seventy-fifth meridian or eastern standard time, which is exactly five hours behind Greenwich time; as far as practicable, only this standard of time is used in the text of the REVIEW, since all Weather Bureau observations are required to be taken and recorded by it. The standards used by the public in the United States and Canada and by the voluntary observers are believed to conform generally to the modern international system of standard meridians, one hour apart, beginning with Greenwich. The Hawaiian standard meridian is 157° 30′, or $10^h\ 30^m$ west of Greenwich. The Costa Rican standard meridian is that of San José, $5^h\ 36^m$ west of Greenwich. Records of miscellaneous phenomena that are reported occasionally in other standards of time by voluntary observers or newspaper correspondents are sometimes corrected to agree with the eastern standard; otherwise, the local standard is mentioned.

Barometric pressures, whether "station pressures" or "sea-level pressures," are now reduced to standard gravity, so that they express pressure in a standard system of absolute measures.

FORECASTS AND WARNINGS.

By Prof. E. B. GARRIOTT, in charge of Forecast Division.

During the first half of the month the barometer was low over the British Isles, and on the 10th and 15th it fell below 29.00 inches over the north of Scotland. Following this period of low pressure the barometer was abnormally high over the eastern Atlantic from the 17th to the 24th. On the 26th a disturbance approached the British Isles, and by the 28th the barometer had fallen to 28.88 inches at Stornoway, Scotland. During the next twenty-four hours the center of disturbance apparently moved eastward toward the Scandinavian coast. During the 30th and 31st a storm of marked strength crossed the north part of the British Isles. In the vicinity of the Azores the barometer was comparatively low on the 1st and 2d, and 13th to 15th, and continued generally high from the 4th to 12th, and 16th to 31st. Over the western Atlantic the weather was seasonably severe, and the barometric depressions that left the American coast appeared to pass over the ocean in high latitudes. Three of these depressions may be identified with those that reached the British Isles.

In the United States the month opened with a depression of slight intensity over the southeastern slope of the Rocky Mountains. Increasing rapidly in strength, this depression crossed the Ohio Valley during the 2d, attended by heavy snow in the northeastern districts, and passed off the middle Atlantic coast by the morning of the 3d, with gales on the lower Lakes and along the middle Atlantic and New England coasts. This storm apparently passed north of the British Isles during the 7th and 8th. On the morning of the 2d storm warnings were ordered on the Atlantic coast from Savannah to Eastport, and the following special warning was sent to points in New York and New England:

> Snow will be heavy in the interior of New York and New England this afternoon and to-night, with high northeast shifting to northerly winds.

Following the passage of this storm a cold wave swept the districts east of the Rocky Mountains. The Savannah News, of January 7, comments as follows regarding the cold wave in that section:

> When the first intimation of the cold wave's approach was received at the Weather Bureau, word was at once sent to florists and they were warned to have their fires up. These were immediately started, and when the wave reached here flowers were well protected.

From the 19th to the 22d the center of the barometric disturbance moved from the middle Plateau region over the Mississippi Valley and the southern Lake region, with a marked increase in strength during the night of the 21st and the morning of the 22d. At 1 a. m. of the 22d, when the storm center was passing over the lower Ohio Valley, a tornado occurred at Moundville, Ala., killing, according to report, 37, and injuring about 100 persons.

During the 23d and 24th an area of low barometer moved southeastward along the eastern Rocky Mountain slope, followed by a cold wave that carried the temperature to 34° and